
Pennington L. [Development of communication by young people with cerebral palsy](#). *Developmental Medicine & Child Neurology* 2014, 56(10), 917-918.

Copyright:

© 2014 Mac Keith Press

This is the peer reviewed version of the following article: Pennington L. [Development of communication by young people with cerebral palsy](#). *Developmental Medicine & Child Neurology* 2014, 56(10), 917-918, which has been published in final form at <http://dx.doi.org/10.1111/dmcn.12502>

This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Self-Archiving.

DOI link to article:

<http://dx.doi.org/10.1111/dmcn.12502>

Date deposited:

12/08/2015



This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International licence](#)

Communication is the act of sending and receiving messages and is usually accomplished by gesture, facial expression and spoken or written language. Skilled communication allows us to share our ideas, thoughts and feelings and facilitates our development of relationships and our access to education, leisure activities and, later, employment. Children with cerebral palsy often experience communication difficulties and recent epidemiological studies have suggested that communication limitations are associated with motor impairments in the first years of life (1) and with both motor and cognitive skill in later childhood in the high school years (2). Type of cerebral palsy has also been observed to predict communication function. More severe communicative limitations have been observed for children with dyskinetic forms of cerebral palsy than with spastic type(2). Communication difficulties in bilateral spastic and dyskinetic cerebral palsy may be due to motor speech impairment alone, but may also be influenced by accompanying intellectual impairments. Vos and colleagues in this issue have prospectively studied the communication of children with cerebral palsy in four different age cohorts and have modelled communication trajectories for children with dyskinetic cerebral palsy, unilateral and bilateral spastic cerebral palsy with and without intellectual impairment from two to sixteen years. Their results support those of Himmelman et al (2), and suggest that across childhood the strongest predictor for expressive, face to face communication is cerebral palsy type and distribution, with unilateral spastic type associated with best outcome. After an initial lag, the children with spastic type cerebral palsy without intellectual impairment they tracked had expressive skills similar to their typically developing peers. Children with nonspastic type who did not have intellectual impairment continued to lag behind, potentially due to the severity of their dysarthria. Vos and colleagues measured expressive communication via any means using the Vineland, which mainly reports interaction using language. Items could have been passed using spoken language or language produced using AAC systems. It would be interesting to ascertain the impact of AAC on children's expressive communication in this study. Information on how many children used AAC, the types of systems they used and the complexity of messages they produce would be helpful. Without the use of such systems mean expressive communicative performance may have been lower, but by what degree is impossible to speculate. Such data could provide important support for the implementation of AAC, which is far from universal, even in countries with relatively well developed and resourced health, education and welfare systems such as the UK.

Intellectual impairment was the strongest predictor of receptive communication. These results suggest that language difficulties in cerebral palsy are strongly influenced by general cognition and that language disorder is not common in this group of children, which has previously been hypothesised(3). It is noticeable that the raw scores of children with bilateral spastic cerebral palsy reduced in middle teenage years; which may be a real effect or may, in this study, be due samples of children being studied within each cohort in a design that was both cross sectional and prospective. Further prospective research, with children studied for longer periods or with potentially larger samples, is needed to examine if the trajectories observed by Vos et al are replicated, and indeed what how receptive scores may continue to change in later teenage years.

Vos and colleagues also provide valuable information on written language development. Learning to read and spell is particularly important in our technological world; information technology can create vast opportunities for learning, leisure and employment. However, access is heavily dependent on the written word. This is the first epidemiological study to track prospectively the literacy development of young people with cerebral palsy. It is encouraging to observe that children

without intellectual impairment achieved literacy scores similar to their typically developing peers. It is hoped that the PERRIN cohorts are studied further and new cohorts are also observed to investigate the acquisition and use of literacy by young people with cerebral palsy, especially those who have intellectual impairment. Future research could also ascertain the causes of literacy difficulties. Some children's literacy may be commensurate with their general intellectual development. Other children's literacy may be influenced by difficulties in phonological awareness and verbal working memory (4, 5). Further information on literacy acquisition could help us provide tailored literacy instruction and help young people increase their access to technology and potentially enhance their participation in social, educational and civic life.

1. Coleman A, Weir KA, Ware RS, Boyd RN. Relationship between communication skills and gross motor function in preschool-aged children with cerebral palsy. *Archives of Physical Medicine and Rehabilitation*. 2013;94(11):2210-7.
2. Himmelmann K, Lindh K, Hidecker MJC. Communication ability in cerebral palsy: A study from the CP register of western Sweden. *European Journal of Paediatric Neurology*. 2013.
3. Pirila S, van der Meere J, Pentikainen T, Ruusu-Niemi P, Korpela R, Kilpinen J, et al. Language and motor speech skills in children with cerebral palsy. *Journal of Communication Disorders*. 2007;40:116-28.
4. Dahlgren-Sandberg A. Reading and spelling abilities in children with severe speech impairments and cerebral palsy at 6, 9 and 12 years of age in relation to cognitive development: a longitudinal study. *Developmental Medicine & Child Neurology*. 2006;48(8):629-34.
5. Peeters M, Verhoeven L, van Balkom H, de Moor J. Foundations of phonological awareness in pre-school children with cerebral palsy: the impact of intellectual disability. *Journal of Intellectual Disability Research*. 2008;52(1):68-78.